



# **Whakatāne-Tauranga Rivers Scheme Advisory Group Meeting**

**Wednesday 18 September 2019  
at 10am**

Mataatua Meeting Room (CMR1)  
Bay of Plenty Regional Council  
5 Quay Street  
Whakatāne



# **Whakatāne-Tauranga Rivers Scheme Advisory Group Meeting**

**Wednesday 18 September 2019 at 10am**

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## **Agenda**

- 1 **Welcome**
- 2 **Apologies**
- 3 **Notes of previous meeting held 16 April 2019**
- 4 **Matters arising from previous meeting**
- 5 **Review of the Floodway and Drainage Bylaw 2008**
- 6 **Operations update**
- 7 **April 2017 Flood Repair Project update**
- 8 **Engineering update**
- 9 **Finance report**
- 10 **Kopeopeo Canal Remediation Project update**
- 11 **General business**
  - a. Gravel management update
  - b. Stopbank damage from grazing
  - c. Plan Change 12 update
  - d. River Scheme rating classification review

# Notes of the Whakatāne-Tauranga Rivers Scheme Advisory Group meeting held at Bay of Plenty Regional Council, Whakatāne, on Tuesday 16 April 2019, commencing at 10am

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- Chair:** Councillor Bill Clark
- Advisory Group:** Bernie Clark, Boots McNaught, Brian Power, Fraser McGougan, Geoff Mercer, Scottie McLeod, Tom Pyatt, Jim Finlay (Whakatāne District Council), Councillor Andrew Iles (Whakatāne District Council)
- BOPRC Councillors:** Councillor Tiipene Marr
- BOPRC Staff:** Kirsty Brown (Rivers and Drainage Assets Manager), Jo Heath (Asset Management Coordinator), Bruce Crabbe (Rivers and Drainage Operations Manager), Geoff Stone (Area Engineer), Tony Dunlop (Flood Repair Project Engineer), Mark Townsend (Engineering Manager), Chris Ingle (General Manager, Integrated Catchments), Kay Boreham (Marketing and Communications Advisor), Nancy Willems (Eastern Catchments Team Leader), Debbie Hyland (Finance and Corporate Planning Manager), Loris Hastie (Management Accountant)
- Public:** Richard Holmes
- Apologies:** Chairman Leeder, Councillor Bruning
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## 1 Welcome

Councillor Clark welcomed everyone to the meeting and Councillor Marr opened the meeting with a karakia.

Chris Ingle outlined some key staff changes. Roger Waugh resigned and finished work in January. Kirsty Brown has been appointed as the Rivers and Drainage Assets Manager. There has also been an across organisation fit-for-purpose review and Simon Stokes' position (Eastern Catchments Manager) was disestablished. The Eastern Bay of Plenty Land Management staff are now part of the Coastal Catchments Team (covering Tauranga catchments, Kaituna catchments and the Eastern catchments) and the new manager is Pim de Monchy. Chris introduced Nancy Willems (Eastern Catchments Team Leader) who will be attending the advisory group meetings on behalf of the Coastal Catchments team.

Councillor Clark congratulated Fraser and Katherine McGougan on winning the Supreme Award of the 2019 Bay of Plenty Ballance Farm Environment Awards.

## 2 Apologies

Apologies received as recorded above.

### 3 Notes of previous meeting held 19 September 2018

Resolved

That the Whakatāne-Tauranga Rivers Scheme Advisory Group:

- 1 Confirm the notes of the meeting held 19 September 2018 as a true and correct record.

Clark/Iles  
CARRIED

### 4 Matters arising from previous meeting

Kirsty Brown ran through the actions from the previous meeting:

- Geoff Stone has spoken with Fraser McGougan regarding the planting of erosion sites and site preparation work is underway for winter planting.
- Richard Holmes has been added to the gravel notification email list.
- Roger Waugh did not speak with Richard Holmes regarding the questions he raised at the September 2018 meeting because subsequently Richard had submitted a number of Official Information Requests.

Richard Holmes commented that he was pleased that progress was being made in the areas he had concerns about.

### 5 River Scheme Governance/Continuous Improvement

Chris Ingle spoke to the River Scheme/Continuous Improvement agenda item. At the September 2018 meeting Nic Newman (Principal Advisor) had sought feedback on how the Advisory Group was working. A report was presented to Council on 13 December 2018 with findings and recommendations. The Council report was circulated to Advisory Group members on 12 February 2019 and feedback on the recommendations was now being sought.

**Discussion:**

- Supportive of an annual forum of river scheme advisory groups, river authorities and freshwater futures community groups. Need to be working collaboratively and future focused.
- Members did not see the need for mileage payments for attending meetings.
- Important for members to understand the scheme and current and future issues. Field visits should be a priority.

**ACTION:**

***Schedule a field trip prior to the September 2019 meeting.***

### 6 Operations update

Bruce Crabbe spoke to the Works Programme report provided in the agenda pack.

**Key points included:**

- Rangitāiki Drainage representatives met last month and it has been valuable working closely with this group on Rangitāiki Drainage Scheme specific issues.

- Operations team meeting with the 34 communal pump scheme groups (ten meetings held to date).
- Good summer construction season and good progress made with annual flood repair and general maintenance work.
- Annual flood repair expenditure is behind budget as some work is being undertaken in conjunction with April 2017 Flood Repair Project works.
- Pumps are being checked and refurbished in preparation for winter.

Geoff Stone delivered a presentation on scheme maintenance work.

#### **Discussion:**

- Making pumps fish-friendly was discussed. There are approximately 100 pumps across the region's river schemes. The approach being taken is that all new pump stations, or replaced pumps, will be fish-friendly. The national River Managers Group is funding research and development into an add-on propeller modification to reduce damage to fish.
- Concern was raised about ratepayers paying for the repair of stopbank damage caused by stock.
- Private occupation of urban Whakatāne stopbanks was discussed e.g. fences, dog kennels, platforms along Riverside Drive. Regional Council is concerned about this issue and an assessment of property owner encroachment onto the stopbank was undertaken by a student over the previous summer.
- Whakatāne District Council wanting to extend the stopbank cycleway (metalled) through to the water treatment plant. The Councils are working together on a plan to remove property encroachment material from the stopbank to achieve flood management priorities as well as allow for cycleway development.

## **7 Flood Repair Project update**

Paula Chapman and Tony Dunlop spoke to the report provided in the agenda pack and delivered a presentation showing progress with the April 2017 Flood Repair Project.

#### **Key points included:**

- 34 Whakatāne-Tauranga sites completed as at 31 March 2019. Seven more sites planned for completion by 30 June 2019. 48% of the high priority sites in this scheme have been completed.
- Progress in this scheme has been constrained by lack of a secure rock supply. Local sources of suitable rock are not available and currently carting rock from Matawai.
- Work in the Whakatāne and Tauranga rivers expected to take the full four years of the project. Completion by June 2021.
- Currently reviewing lower priority sites to identify any changes. Some sites need reprioritising and others no longer needing repair can be removed from the programme.
- Although willow aphid has been an issue in the area in recent years, willows used in the repair works are growing well with no sign of willow aphid damage.

#### **Discussion:**

- Issues with local rock supply discussed. Council working hard to get a reliable supply that meets the required specifications. Locally, Matahina rock is the best for the type of repair work being undertaken but the quarry has closed due to a dispute between the operator and the owner. Council are currently supporting several landowners to develop new quarries, and are also joining Ōpōtiki District Council to investigate options to meet the significant demand for rock for the harbour development.

Manawahe quarry has been investigated, and the rock used at a number of sites, however the rock is slabby, does not knit well together, and is not suitable in areas with high velocities.

- Concern was expressed regarding unrepaired sites getting worse. Reassurance given that the sites are being monitored and reprioritised as necessary and that Operations staff are also working on annual flood damaged sites.
- Japanese walnut trees have been an issue and staff are trying to eradicate them. They are shallow rooted so do not provide any bank stabilisation benefit, rather they are prone to falling over and causing erosion issues. They also seed very readily.

## 8 Engineering update

Mark Townsend spoke to the report provided in the agenda pack and delivered a presentation covering the following key topics:

### 8.1 Whakatāne River capacity review

- During a capacity review the river is modelled to assess how much water can flow down the river. This informs whether upgrades are required to meet the agreed level of service.
- Modelling is underway for the Whakatāne River but it's not yet complete.
- Rating curve review is used to determine 1% AEP (Annual Exceedance Probability) flows for flood management purposes. The Valley Road gauging site is owned by NIWA and they are contracted to provide river rating information at that site. Council have also undertaken a rating review using NIWA's information and have produced a different result. Discussions are continuing with NIWA.

### 8.2 Whakatāne urban stopbank raising

- The design level for urban Whakatāne stopbanks is 1% AEP + 800mm freeboard. The criteria for initiating stopbank raising is if the existing stopbank level is within 50% of the freeboard level. A number of areas from the Heads to McAlister Street met the criteria and need raising.
- No construction will be undertaken this financial year and any unspent funds will be transferred to 2019-2020. It is highly likely that additional budget will be required for this work.

### 8.3 Kakaharoa Drive and Quay Street seepage issues

- To control seepage observed along Kakaharoa Drive and Quay Street during the 2011 and 2017 flood events, a series of seepage trenches are proposed to intercept the flow.
- Geotechnical assessments are complete and detailed design is about to commence.
- 2018-2019 budget contained \$270k for design and construction. No construction will be undertaken this year, and any unspent funds will be transferred to 2019-2020. It is highly likely that additional budget will be required for this work.

### 8.4 Floodwall Assessments

- A recommendation of the Rangitāiki River Scheme Review was for all concrete floodwalls in the region to be assessed.
- Three sections along the Whakatāne River are protected by floodwalls – upstream of Landing Road Bridge, Yacht Club to Main Wharf, and waka shelter to boat ramp playground. Assessments on these sections are progressing and include a visual check, geotechnical investigations (to assess foundations), and an engineering assessment (recommend options).

- Assessments to date indicate that: some floodwalls will need raising to meet freeboard requirements; some floodwall foundations will need to be modified; some areas will need seepage trenches and pressure relief valves; and some of the expansion joints will need remedial work.
- Work is planned for 2019-2020 and will include a communications plan and community consultation.

**Discussion:**

- The importance of early and transparent communication with the community regarding urban stopbank and floodwall raising was discussed. Input was sought from members on how best to engage with the community. Need to start socialising the proposal now and link with climate change conversations that are happening. Communications need to clearly explain why this work is needed and the options that are being considered.
- The geotechnical investigations were featured in the Beacon and any results should be fed back to the public. The report has not yet been finalised but results will be shared with the group.

**ACTION:**

**Share floodwall assessment geotechnical report findings with members at the September meeting.**

## 9 Finance report

Debbie Hyland spoke to the finance report provided in the agenda pack and gave an overview of the scheme's revenue and expenditure to 31 January 2019.

**Key points included:**

- Capital expenditure is lower than budgeted. This is due to the April 2017 Flood Repair Project completing fewer repair sites than planned because of constraints with rock supply.
- Depreciation costs are higher due to the annual July 2018 valuation of scheme assets. Scheme assets are now valued at \$70,360,000.
- The Whakatāne-Tauranga Rivers Scheme works reserve is in deficit.
- The scheme has outstanding loans of \$6.5 m.
- Excellent relationship with Ministry of Civil Defence and Emergency Management, and flood repair insurance claims are progressing well.

## 10 Kopeopeo Canal Remediation Project update

Bruce Crabbe provided an update on the Kopeopeo Canal Remediation Project.

**Key points included:**

- Dredging completed on 3.6 km of the total 5.2 km (69% complete). New completion date of mid-June 2019.
- Sediment is now being pumped to Containment Site 3 on Keepa Road.
- The area past Kopeopeo-Orini flood pump will soon become available again for flood control.
- Current Ministry for the Environment funding is for containment only. Regional Council needs to fund the remediation.
- Kopeopeo Canal Project webpage has a lot of information about the project and bioremediation <https://www.boprc.govt.nz/our-projects/kopeopeo-canal-remediation-project/>

- The Community Liaison Group meetings are publically notified and open to the public. Scotty McLeod is a representative on the Community Liaison Group and the Project Steering group.

**Discussion:**

- Concern expressed at the amount of toxin within the containment sites, the possibility of concentrated areas of toxin, and the effectiveness of bio-remediation.
- One of the top ten wood waste sites in the country is on the Orini Canal and Whakatāne District Council is currently working on getting resource consent to undertake containment at that site. The situation is different to the Kopeopeo Canal – in the canal the dioxin is contained within the sediment, the Orini Canal site is an area where wood waste was dumped on land.
- Contaminant has also been found in the canal to the west of SH30. This is not part of the initial project and at this stage the focus is on completing the initial project objectives. The Kopeopeo West area will be investigated, the extent of the contamination determined, and best options for remediation considered. External funding options will need to be investigated.

## 11 General business

### 11.1 Gravel management update

Mark Townsend spoke to the gravel management update provided in the agenda pack.

**Key points included:**

- In the past gravel management was shared across the Rivers and Drainage and Engineering teams. With recent staff changes this has been re-assessed and gravel management is now an Engineering team responsibility.
- In November 2018, a halt was placed on all commercial extraction from the Whakatāne and Tauranga Rivers (and also the Waioeka and Otara Rivers) until the relevant technical analysis was available through the NERMN report (Natural Environmental Regional Monitoring Network – river and stream channel monitoring). This report was in the process of being completed when the April 2017 floods occurred. The floods dramatically changed the rivers making a lot of the information in the draft report invalid and requiring cross-section surveys to be repeated.
- Following the halt on commercial extraction there has been push back from contractors who have extracted gravel in the past. There has been a delegation from NZTA and contractors have been contacting Chairman Leeder.
- Cross-section surveys of the river beds are carried out every 2-3 years and analysis of this information is presented in the NERMN report. The NERMN report makes comment on the river reaches, highlights where there is aggradation (build-up) and degradation (loss), and provides recommendations for where gravel can be extracted and at what volume.
- Analysis is showing there is no gravel available for extraction in the Whakatāne River. Currently the only extractions allowed will be for river management purposes, specifically where flood repair work is being carried out and overflow cuts are recommended to relieve pressure on eroded banks.

**Discussion:**

- The charges for extracted gravel were discussed. Regional Council charges a management fee of 90 cents per cubic metre. In some areas landowners have been charging for access through private property. This is a third party agreement between the contractor with the gravel allocation and the landowner.



## 11.2 Bylaw and policy reviews

Chris Ingle spoke to the report provided in the agenda pack.

### Key points included:

#### Floodway and Drainage Bylaw Review

- Floodway and Drainage Bylaw 2008 due to be reviewed (required to be reviewed every ten years).
- Most aspects of the review will be technical, ensuring that rules are up-to-date with best practice drain management and current engineering requirements.
- The revised Bylaw will be open for public consultation and the river scheme advisory groups will be a key component of this.
- Public consultation is intended to commence early in 2020 with the new Bylaw adopted in June 2020.

#### River Scheme Rates Review

- Council is looking at the fairness of the current rating system and is scoping and prioritising schemes for a rating review.
- First review to start next financial year.

## 11.3 Communications update

Kay Boreham updated the group on communications activities across the Eastern Bay.

- Members were advised that the Council website had been upgraded and were encouraged to register for Project Page updates.
- A suggested action from the Rivers Scheme Governance report was to increase communication with advisory groups between meetings and the concept of a six-monthly electronic newsletter is being worked on to update Advisory Group members on key issues.
- Whakatāne stopbank raising plans will have a high level of public interest and a communications and engagement plan will be in place. Media coverage of the geotechnical drilling was the first step in signalling to the public that stopbank raising is likely to occur in the near future.

Jo Heath demonstrated the geospatial Story Map that when complete will be available on Council's website. The Story Map provides background information about the April 2017 weather events, shows pictures of flooding across the region and allows users to search a map of the flood repair sites to find out basic information about each site and when it is scheduled for completion.

## 11.4 Other

Richard Holmes asked when the bed levels for the Tauranga River will be available. Mark Townsend responded that they are on the work plan for next financial year.

Councillor Marr closed the meeting with a karakia.

**Meeting closed at: 12:30pm**

## Meeting Action Sheet

### Whakatāne-Tauranga Rivers Scheme

16 April 2019

Action	Person Responsible	Completed	Comment
1. Schedule a field trip prior to the September 2019 meeting.	Jo	In progress	Field trip planned for 30 August postponed and to be rescheduled
2. Share floodwall assessment geotechnical report findings with members at the September meeting.	Mark		Update to be provided at September meeting

# MEMORANDUM



**To:** River Scheme Advisory Group Members

**From:** Kirsty Brown  
Rivers and Drainage Assets Manager

**Date:** 15 August 2019

**File Ref:** A3323946

**Subject:** Review of the Floodway and Drainage Bylaw 2008

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## Background

The Floodway and Drainage Bylaw was established for the protection of river and drainage scheme assets, such as pump stations, drains and stopbanks, from damage or misuse. It only applies to assets which are owned or under the control of Regional Council. The bylaw sets what can and cannot be done in the vicinity of scheme assets, the process for gaining 'bylaw authority' for works, and the remedies available to Council for non-authorized and non-compliant work.

The Local Government Act 2002 requires Council to undertake a comprehensive review of its bylaws ten years after the last review, and within a two year time frame from that review date. Review of the Floodway and Drainage Bylaw 2008 needs to be completed by June 2020.

## Identified issues

An internal review of the effectiveness of the existing bylaw is currently underway. Overall staff consider the bylaw rules effective for the protection of the rivers and drainage scheme assets. However, some key issues have arisen since the previous review including:

- Poor public and territorial local authority awareness of the bylaw's existence and requirements.
- Changes in land use, in particular conversions from dairy to kiwifruit.
- Possible need to increase bylaw applicable areas to ensure specific geotechnical issues are managed appropriately.
- The need for stronger restrictions on activities like ploughing and fencing that can accelerate seepage pressure development.
- Review of enforcement powers and processes.
- Review of application fees.
- Clarification of some of the bylaw's definitions.

## Consultation and community engagement

Early engagement is planned with River Scheme Advisory Groups and key stakeholders, including tangata whenua, territorial local authorities and landowners. Workshops will be arranged with advisory groups in October/November 2019 where the proposed changes and amendments to the bylaw will be presented and discussed in detail.

The input we will be seeking from advisory group members includes:

- Feedback and comments on the recommended changes and amendments.
- To discuss the bylaw review within your networks and provide feedback from the communities perspective.
- Support at community open days during the consultation process.

### Timeframes

Anticipated timeframes for the bylaw review programme are:

Date	Stage required
September 2019 - March 2020	Early engagement with key stakeholders - river scheme advisory groups, tangata whenua, territorial local authorities and landowners
February 2020	Public launch of review
February - March 2020	Council workshop to discuss recommendations and comments from early engagement and data gathering
March 2020	Adoption by Council to begin the formal Special Consultative Procedures
March - April 2020	Consultation events
May 2020	Hearings panel convened
Early June 2020	Deliberations panel convened
Late June 2020	Council adopts the bylaw

Kirsty Brown

**Rivers and Drainage Assets Manager**

## Whakatāne-Tauranga Rivers Scheme Maintenance Programme 2019 - 2020

2/09/2019

Objective ID: A3352952

	Work Type	Reach Number	Site	Location (LB=left bank, RB=right bank)	Annual Budget	Job Estimate	Notes
1	<b>General</b>						
2		<b>Annual Flood Damage</b> (See separate 2017 Flood Damage priority list also)			<b>\$193,500</b>		
3	<b>Tauranga River</b>	Erosion between trench willow needs planting	R5	K Clarke	LB 15.1	\$15,000	
4		Trenched willows and planting	R5	B Clarke	RB 12	\$30,000	
5		bank erosion slumping	R5	B Clarke	RB 13	\$13,000	
6		Trenched willows and planting	R6	A Wardlaw	RB 22.2	\$30,000	
7		Trenched willows and planting	R6	A Wardlaw	LB 22.7	\$33,000	
8		Trenched willows and planting	R6	J Brown	RB 23.1	\$33,000	
9		Trenched willows and planting	R6	F Savage	LB 21.8	\$30,000	
10		Bank erosion threatening rock works repair	R6	Rakuraku's	RB 26.3	\$50,000	
11	<b>Whakatāne River</b>	Ohotu Bridge bank erosion repair rock work	R6	Ohotu bridge	LB 33.2	\$0	WDC
12		bank erosion repair TW and Planting	R2	Langenberger	LB 12.2	\$15,000	
13		Waikirikiri rock replenishment and channel realign	R6	Waikirikiri	RB /LB 39.1	\$120,000	
14		Ōwhakatoro - Sisam's office site (1) rockworks	R7	Office site	LB 4.6	\$7,000	
15		Ōwhakatoro - Sisam's top site (2)rockworks	R7	top site	LB 5.3	\$8,000	
16				<b>Subtotal</b>		<b>\$384,000</b>	
17							
18		<b>Fly tipping and rubbish collection/disposal</b>		all sites		<b>\$8,000</b>	\$8,000
19		<b>Pest Control</b>		all sites		<b>\$8,000</b>	\$8,000
20							
21	<b>Whakatāne River</b>						
22	<b>Mouth to Lime works</b>	<b>Drain/Canal/Tributary Maintenance</b>				<b>\$37,300</b>	
23	<b>including Tributaries</b>	Deweeding	R7	Downards Rd Drain		\$4,000	
24		Pole planting and native planting	R7	Waioho Stream		\$4,000	Completed planting stage 1
25		Desilting (tributaries)	R7	Waiwherowhero		<b>\$58,460</b>	\$5,000
26		Outlet desilting	R1 & 2	Various Sites	RB and LB	\$12,000	Desilt progressing
27		Desilting	R7	Waioho Canal	1.1 km-4.3 km	\$16,000	
28		Monitoring - Drone flight	R7	Waioho Stream		\$2,000	
29							
30		<b>River Channel Weed Spraying</b>		Various (all reaches)		<b>\$11,816</b>	\$20,000
31		Rūātoki Area	R4	33.2- 37.2 km		\$10,000	
32		Waioho Stream spray pampas	R7	White Pine to Downards Rd		\$4,000	

	Work Type	Reach Number	Site	Location (LB=left bank, RB=right bank)	Annual Budget	Job Estimate	Notes
33	Rewatu Rd floodgate outlet Batter banks	R2	Rewatu Rd 719			\$4,000	
34	Spray pampas on beaches	R3 to R6	various			\$15,000	
35							
36	<b>Tree Clearing, Mulching &amp; Layering</b>				<b>\$61,989</b>		
37	Tree Layering	R2	Sisam's	20.2-21.0 km LB		\$7,500	
38	Tree layering	R4	Black/Holmes	31.2-32.2 km LB		\$7,500	
39	Nut tree/wattle eradication	R3	Various sites	RB and LB		\$6,000	in progress
40	Nut tree & dead willow clearing	R4	McGougan's and Holmes	RB 28.8		\$6,000	
41	Weed spraying (rogue willows and blackberry)	R1	Martins Lease, all stopbanks	4.6-4.8km RB		\$4,000	
42	Mulching	R2	S. Brownless	17.6 km LB		\$5,000	
43	Weed spray Drains Rewatu road	R2				\$1,200	
44							
45	<b>Planting</b>				<b>\$32,036</b>		
46	Back-up planting	R1 to R6	Various sites all reaches			\$30,000	in progress
47	Release spraying of native plants	R5, 6 & 7	Various, Waikirikiri, McGougan & Sisam's			\$10,000	3x release spraying per year
48	Release spraying of native plants	R1 & 2	Simpsons x 2 , Martin's lease & Ferry Road			\$6,000	3-4 releases per year
49							
50	<b>Rock/Rubble</b>				<b>\$125,100</b>		
51	Rock replenishment	R1	Fretwell's Lease/Board Mills	5.1-5.5 km LB		\$65,000	Recent flood damage
52	Rock replenishment	R2	pound			\$6,000	
53							
54	<b>Fencing</b>	R1	Fretwell & Martin's lease			\$10,000	
55	Stock water troughs new lease options	R1	Martins Lease			\$5,000	awaiting quote and proposal
56							
57	<b>Beach Shaping/Ripping</b>				<b>\$20,080</b>		
58	Beach ripping	R3	Various	RB and LB		\$6,000	
59	Beach ripping	R4	Various	RB and LB		\$6,000	
60	Over flow channel cuts	R3	Various sites	RB and LB		\$12,000	
61	Overflow channel cuts- Ngāti Rango	R4	Various sites	RB and LB	<b>\$30,000</b>	\$20,000	
62	Waikirikiri area	R6				\$20,000	
63							
64	<b>Remove Rail Iron from River Bed</b>	R4, 5 & 6	Waikirikiri to Pekatahi and Valley road			\$10,000	
65							
66	<b>Stopbanks</b>	<b>Stopbank Miscellaneous Maintenance</b>			<b>\$23,062</b>		

	Work Type	Reach Number	Site	Location (LB=left bank, RB=right bank)	Annual Budget	Job Estimate	Notes
67	Stopbank mowing (Rowing Club)	R1	Urban area (various)	RB		\$7,000	
68	stopbank repairs	R1	Keepa Road	LB		\$3,500	
69	Waioho Canal spraying pampas	R7	Ernest's	4.2 km LB		\$5,000	
70	Jones Outlet - culvert replacement	R3	Jones outlet	17.8 km LB		\$2,000	Concrete box culvert
71	S Brownless container replacement	R3		13.9 km RB		\$20,000	Steel pipe & floodgate
72	All floodgate outlets - misc. repairs	all	Sykes, Houston's, Ingle's, Rewatu Rd and others	Various		\$10,000	
73	Repairs, access & gravel extraction		Red Devon outlet			\$10,000	
74							
75	<b>Floodgates</b>						
	Floodgate Inspections	R1 & R2	Various sites		\$4,326	\$4,100	
76	(Kope-Orini &	R1	Various outlets	RB		\$3,000	
77	Te Rahu floodgates)	R1	Various sites		\$53	\$4,000	
78	Floodgate miscellaneous maintenance	R1	Various sites		\$3,150		
79	Floodgate ancillary maintenance	R1	Various sites		\$1,700		
80	New knife gate valve for culvert at 48 Henderson Street	R1				\$10,000	Under investigation
81	Te Rahu Floodgate wire and I bolt attachment x2	R1				\$3,000	1 gate remaining
82							
83	<b>Pump Stations</b>						
	Pump Inspections				\$3,049	\$5,300	
84	(Kope-Orini,				\$7,235	\$1,900	
85	Fortunes &				\$7,390		
	5 year maintenance						
86	Te Rahu stations)		Fortunes Rd Station all pumps		\$9,450	\$24,000	
87	Ancillary maintenance				\$7,494	\$2,000	Safety hand rail
88	Electricity				\$48,000	\$8,000	
89	Te Rahu pump station: Surge chamber repairs and discharge pipe replacement						Being completed under separate capex work programme
90	Fortunes pumps station floodgate replacement		Fortunes Rd p/s			\$6,000	
91							
92	<b>Floodwalls</b>						
	Misc. maintenance, incl sealant replacement	R1	Multiple			\$3,000	
93							
94	<b>Tauranga River</b>						
95	<b>Confluence to</b>						
	<b>Channel &amp; river bank weed spraying</b>	R5 & 6	All reaches various sites		\$14,406	\$25,000	
96	Barsdell's (30km)						
97	<b>Tree clearing/mulching/layering</b>				\$38,862		
98	Tree burning	R5 & 6	Wallace, Clarke & Fleming's			\$6,000	

	Work Type	Reach Number	Site	Location (LB=left bank, RB=right bank)	Annual Budget	Job Estimate	Notes
99	Willow clearing & mulching	R6	B Osborne	22.8 to 22.9km		\$6,000	on hold
100							
101	<b>Planting</b>				<b>\$20,084</b>		
102	Release spraying native plants	R5	K.Flemming	RB 16.1-17.7 km		\$4,000	
103	Release spraying native plants	R6	Osborne	LB 20.5-20.7 km		\$3,000	
104	Release spraying native plants	R6	J Brown	RB 23.6		\$5,000	
105	Release spraying native plants	R6	Wallace			\$5,000	
106							
107	<b>Rock and Rubble</b>	R5	B. Clark	RB 14.4km	<b>\$38,114</b>	\$35,000	
108							
109	<b>Fencing</b>	R5	Various Sites		<b>\$0</b>	\$5,000	
110							
111	<b>Beach shaping/ripping</b>				<b>\$45,682</b>		
112	Ripping	R5	Beach Ripping-Various	RB and LB		\$6,000	
113	Ripping	R6	Beach Ripping-Various	RB and LB		\$12,000	
114	Overflow Channel Cuts	R6	Various	RB and LB	<b>\$30,000</b>	\$8,000	
115							
116							
117	<b>Maintenance Works Only</b>				<b>\$694,838</b>	<b>\$607,000</b>	
118	<b>Annual Flood Repairs</b>				<b>\$193,500</b>	<b>\$384,000</b>	
119	<b>Overall Totals</b>				<b>\$888,338</b>	<b>\$991,000</b>	



# MEMORANDUM



**To:** Whakatāne-Tauranga Rivers Scheme Advisory Group  
For period 1 March 2019 to 30 August 2019

**From:** Paula Chapman **Date:** 30 August 2019  
**Project Manager - Flood Recovery**

**File Ref:** A3347287

**Subject:** **Status Report - Rivers and Drainage, April 2017 Flood Repair Project**

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## **April 2017 Flood Event**

In early April 2017, the Eastern Bay of Plenty was hit by ex-Tropical Cyclone Debbie. The cyclone brought with it prolonged torrential rain, resulting in rising river levels across all the rivers and waterways in the region. The cyclone dropped considerable rainfall over the entire Bay of Plenty area which produced record high river levels and flows. In the Rangitāiki, flows reaching the Matahina Dam were 20% higher than ever recorded. Flows in the Whakatāne River were captured as 34% higher than previously recorded.

The event resulted in significant damage to river and drainage networks and assets across the region, from the Kaituna in the west through to the Waioeka-Otara catchment in the east.

## **1.0 Programme Update**

### **1.1 Programme update summary**

- The flood recovery project is two years into the estimated four year programme. Physical repair works have been steady across the programme as conditions and material availability have allowed.
- As at 30 August 2019, 264 site repair works are complete from the total programme of 520 sites (51%). This work includes many of the highest priority works. In the case of the Whakatāne-Tauranga Rivers Scheme 42 sites from a total programme of 108 sites (39%) have been completed. Progress in this scheme has been delayed due to the constrained rock supply in the eastern Bay of Plenty. Of the high priority sites in this scheme 62% have been completed.
- Gary Williams of Waterscape (specialist consulting engineer in the field of water and soil engineering) visited last month to provide input and feedback for some of the high priority repair works along with general river management advice. Gary will be presenting to the Advisory Group as part of this meeting agenda.
- The most visible repair associated with the total project is the College Road stopbank rebuild which was completed in December.

- The project team has begun reviewing lower priority sites to determine which are no longer required and can be removed from the programme.
- The process for claiming eligible costs from central government has been established. The most recent claims are for essential infrastructure repairs. The project team is currently working on Claim Eight.
- Communication and stakeholder engagement has been a feature of the project due to the high level of public and stakeholder interest in the recovery from the April 2017 floods, and this will continue.
- A progress payment for Infrastructure Insurance has been received (\$2,000,000) and a second payment has been requested.
- A progress payment of \$115,000 has also been received to support the Council's Material Damage insurance claim and a second payment has been requested.

## **1.2 Health and Safety**

- Projects are managed and delivered in keeping with Council's standard Health and Safety policies, processes and contractor requirements. SHE (Safety, Health and Employment) certification is a requirement for the Rivers and Drainage Panel Contractors. On site Health and Safety site audits are standard practice for commissioned works. To date no health and safety concerns have been raised across the programme.

## **1.3 Environment and Heritage**

- Priority assessment has occurred for known sites of cultural significance. Staff continue to liaise with Iwi and hapu stakeholders to inform site works.
- Works comply with the Regional Natural Resources Plan, Bay of Plenty Regional Council policies and bylaws for the Rivers and Drainage activities.
- The team is working with Coastal Catchments (Land Management) to identify opportunities to work together to increase inanga and tuna habitat.

## **1.4 Quality**

- Sections of river are re-inspected prior to developing the detailed work scope for each site. Job specifications and design are included as part of a standard approval and procurement process. Due to the passage of time more often than not high priority sites are showing increased levels of damage compared to initial assessments and estimates.
- Job completion includes the capture of new or repaired assets into Council's Asset Management System.
- Dedicated administration resource is supporting the planning, procurement and funding recovery process.

## **1.5 Communications / Community and Stakeholder Engagement**

- An increase in Bay of Plenty Regional Council communications staff resource has supported the delivery of the project. Council continues to input into the regular established newsletters, such as the Edgecumbe Collective Newsletter and the Regional Council website to keep the community informed on work plans and progress. The project page is now included on Council's web site and interested people can follow the page to ensure

they receive regular updates. <https://www.boprc.govt.nz/our-projects/april-2017-flood-repair-project/>

- The project team continue to liaise with the Waimana Kaaku, the Ōhinemataroa River Committee and Ngāi Tuhoe. There has also been increased interest from local Māori Trusts (property owners) in the Flood Repair Project as work for adjacent sites is planned.

## 1.6 Procurement

- Work to date has centered mostly on high priority repair projects. The total programme is made up of multiple smaller projects and these have been delivered utilising established Rivers and Drainage Panel Supplier contract agreements. The panel approval process ensures contractors are capable of the work and hold the necessary accreditations and insurance cover. Existing contracts were renewed for a further three years in February 2019 and where resource gaps were evident new suppliers were invited to join the panel.
- Kaituna rock work is supported by Poplar Lane (Papamoa) and Kaitemako Quarry (Welcome Bay).
- Rakauroa Quarry (Matawai) is currently supplying all Ōpōtiki and Tauranga River (Waimana) sites, and Alan Rust Quarry (Te Mahoe) the upper Rangitaiki River work.
- The shortage of suitable graded rock supply has constrained the programme of works in the eastern Bay of Plenty, specifically work on the Whakatāne River and the lower Rangitāiki and Tarawera Rivers. For the summer construction season rock from Alan Rust Quarry (Te Mahoe) will supply the lower Rangitāiki and Whakatāne works. Tarawera River rock requirements will be met through the Ratahi and Ywarri Quarries (provided quality assurance testing is met). Staff are hopeful a new supply will become available from Tāneatua to support Whakatāne River works and are also investigating options to procure rock supply from other more distant locations which will inevitably increase the material cost to site.

## 1.7 Programme Delivery

<ul style="list-style-type: none"> <li>• A total of 520 sites have been identified in the repair programme across the region, 108 are associated with the Whakatāne-Tauranga Rivers Scheme</li> </ul>
<ul style="list-style-type: none"> <li>• Across the programme 264 sites have been completed, 42 of these are in the Whakatāne-Tauranga Rivers Scheme</li> </ul>
<ul style="list-style-type: none"> <li>• 145 sites were originally programmed for completion in 2018/19, however only 130 were completed due to the constrained rock supply, 16 of those were in the Whakatāne-Tauranga Rivers Scheme.</li> </ul>
<ul style="list-style-type: none"> <li>• 148 sites are targeted for completion in the 2019/20 year and 34 of those are in the Whakatāne-Tauranga Rivers Scheme.</li> </ul>
<ul style="list-style-type: none"> <li>• Total programme completion date remains at 30 June 2021</li> </ul>

Key sites completed during the last period in include – WH108 Te Tahi Street, WH176 Waimana West Bridge, WH177 Flemings

Key sites programmed for the next 6 months include WH137 and WH129 Tuhoe Trust, WH104 Boards Mills and WH105 Fretwell

There are a number of sites where damage resulting from the April 2017 events, which have not yet been repaired, has been exacerbated by recent moderate high rainfall events.

For these sites the original estimates to do repairs is likely to be significantly less than actual costs.

## 1.8 Financial

### Forecast Costs Total Programme

Estimated total programme cost Whakatāne-Tauranga Rivers Scheme	\$12,130,100
Estimated betterment value	\$6,086,794

### 2017/18 Budget vs Actual

Expenditure Budget – for infrastructure works	\$2,850,000
Total expenditure at 30 June 2018 – for infrastructure works	\$1,683,969

### 2018/19 – Budget vs Actual

Expenditure Budget – for infrastructure works	\$3,366,000
Total expenditure at 30 June 2019 – for infrastructure works	\$1,668,824

### 2019/20 – Budget vs Actual

Expenditure Budget – for infrastructure works	\$3,127,200
Total expenditure at 31 July 2019 – for infrastructure works	\$49,691

## 2.0 Programme Risks and Issues

Risk/Issue	Description	Action/management	Owner
Ground conditions	Wet conditions restrict work programme	Undertake soft engineering works and rock stockpile work during winter months Undertake drain bank repairs in summer	BOPRC
Weather	Future weather events will exacerbate damaged sites	Complete site works in priority order as this factors in risk and consequence	BOPRC MCDEM Insurer
Weather	Severe weather event may cause new damage	Review works programme against new works (annual flood damage)	BOPRC MCDEM Insurer
Rock material availability	Suitably graded rock supply is restricted and the operating environment is variable	Working with rock sources to supply suitable material for works in Ōpōtiki (Rakauroa Quarry in Matawai) and Rangitāiki (Ywari Quarry in Manawahe), and Kaituna (Kaitemako) Encourage new rock sources to enter Council's prequalified panel supplier schedule Investigate opportunities to support new quarry's in the Eastern Bay of Plenty	BOPRC
Resource	Staff resource is limited for oversight of on-site works	Using in-house resources (Area Engineers) to supervise some sites. Additional contract resource for rock grading/audits and works completion asset capture	BOPRC
Programme length	Property owners want works associated with their property undertaken first	Implement communications and engagement plan Direct communication with property owners	BOPRC
Insurance	Claim limits for individual works are not known	Aon insurance specialist supporting claim process	BOPRC Aon
Cost	Cost exceeds budget	Work closely with MCDEM and Insurers, maximise contributions from other stakeholders	BOPRC Aon MCDEM Insurer

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### 3.0 Recoveries

- Loss adjustors have been assigned for our infrastructure claim and our material damage claim. Staff are working with insurance specialists Aon to progress the claims process. Progress payments have been received for Infrastructure Insurance (\$2,000,000) and Material Damage (\$115,000) claims.
- The project team is working with the central government (MCDEM) representative and is comfortable with the process adopted.

### 4.0 Expected Progress within the Next 6 Month Period

- Complete 50% of the total Whakatāne-Tauranga Rivers Scheme sites.
- Review of remaining Whakatāne-Tauranga Rivers Scheme sites to determine any that can be removed from the programme.
- Lodge and receive MCDEM Claim 8, and Claim 6 (Part 2 Edgecumbe).
- Submit request for a further infrastructure insurance progress payment.

Paula Chapman  
**Project Manager Flood Recovery**

# Flood Repair Project

Two extreme weather events in early April 2017 brought prolonged torrential rain to the Bay of Plenty. The resulting record high river levels and extensive flooding caused significant damage to river and drainage networks and assets across the region.



## Repairing the damage



**520**  
repair sites



**Total budget**  
in excess of  
**\$45m**



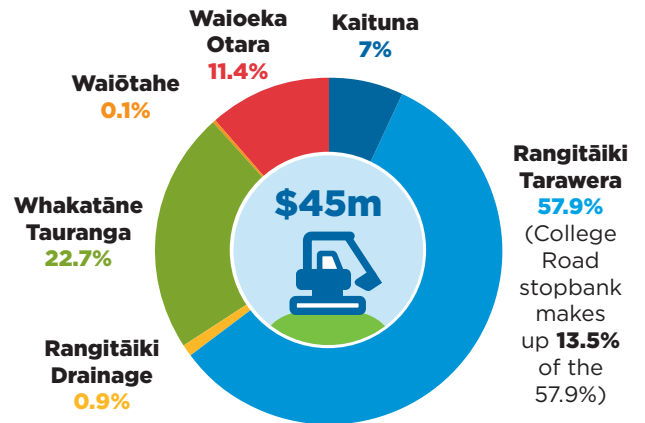
**All repairs** to  
be completed by  
**30 June 2021**

**63%** of **high priority** sites  
are complete

We're repairing the  
damage to protect our  
**people, property  
and livelihoods**

## Repair costs by River Scheme

The **Rangitāiki-Tarawera Rivers Scheme**  
was the worst affected, accounting for  
**more than half** the repair budget.



## Tracking our progress

<b>Rangitāiki Tarawera</b> 224 sites <b>70 complete</b> ✓	<b>Whakatāne Tauranga</b> 108 sites <b>40 complete</b> ✓	<b>Waiōka Otara</b> 59 sites <b>50 complete</b> ✓
<b>Rangitāiki Drainage</b> 53 sites <b>49 complete</b> ✓	<b>Kaituna</b> 45 sites <b>9 complete</b> ✓	<b>Waiōtahe</b> 31 sites <b>All sites complete</b> ✓
<b>249 SITES 48%</b> completed as at <b>30 June 2019</b>		College Road <b>stopbank realignment</b> <b>COMPLETE</b> ✓

## What's happening in 2019-2020



2019-2020 budget

**11.1million**

### To complete:

Rangitāiki Drainage **pump station repairs**

**100%** of Rangitāiki  
Drainage sites

**90%** of high  
priority sites

Repairs  
to a further  
**148**  
sites across  
the region

# MEMORANDUM



**To:** Whakatāne-Tauranga Rivers Scheme  
Advisory Group

**From:** Mark Townsend  
Engineering Manager

**Date:** 30 August 2019

**File Ref:** A3347694

**Subject:** Engineering Update

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## 1 Whakatāne River Capacity Review

Budget 2019/20 Modelling \$94,000

The purpose of the Whakatāne River Capacity Review is to complete a review for the existing Whakatāne River stopbanks from the Whakatāne River/Tauranga River confluence to the Whakatāne River mouth. The objective is to determine the required stopbank crest levels to meet the Whakatāne-Tauranga Rivers Scheme level of service.

Work to date has generated the data needed to undertake urban stop bank raising. Discussions continue with NIWA regarding agreement on the appropriate river rating. River rating is used to bench mark the AEP (annual exceedance probability). The hydraulic modelling component of the capacity review is currently on hold pending the river rating.

## 2 Lower Whakatāne River Stopbank Project

Budget 2019/20 Design and Construction \$1,389,000

This project brings together a number of different interdependent work streams with the objective of providing agreed levels of service to protect the people, property and livelihoods of the Whakatāne Community.

Now that preliminary work has been undertaken it is clear that the place holder budget allocations and timelines will be insufficient. Updates to both the budget and project period will be updated during this year in time for 2020/21 Annual Plan deliberations.

The scope of this work is also being influenced by the Whakatāne District Council (WDC) Town Regeneration Project. Discussions have been held and will continue with WDC.

The project also incorporates climate change adaption. The work encompasses:

- Urban stopbank raising
- Quay Street and Kakaharoa Drive seepage
- Floodwall assessments



## Update - Urban stopbank raising

Stopbank sections of the lower Whakatāne that are proposed for raising are outlined below. Construction will be undertaken as part of the overall project in combination with floodwall and seepage control work.



Figure 1: Proposed stop bank raising extent

## Update - Quay Street and Kakaharoa Drive seepage

This work responds to excessive seepage observed in the 2011 and April 2017 flood events. A series of seepage trenches is proposed to intercept the flow. Detailed design of the work is underway and the work will be undertaken as part of the overall project in combination with floodwall and stopbank.



Figure 2: Proposed locations of seepage trenches

## Update - Floodwall assessments

There are three areas of stopbank along the Whakatāne River that are protected with floodwalls. All are situated on the left bank. They are:

- Site 1 - upstream of the Whakatāne Bridge
- Site 2 - from the Yacht Club to the Fishing Club
- Site 3 - from the waka shelter to the playground at the Heads (boat ramp carpark)

Geotechnical site investigations have been undertaken for sites 1 and 2. Analysis is in progress. Geotechnical site investigations for site 3 are scheduled for September.



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Each site solution will be unique depending on the investigation results and work will be programmed as part of the overall project in combination with seepage and stopbank works.

### **3 Te Rahu Pump Station Pipeline Replacement**

Budget 2019/20 Construction \$ 260,000

During the April 2017 flood event the Te Rahu pump station suffered damage to its surge chamber. While scoping the repair work it was discovered that the associated discharge pipeline to the river outlet was in poor condition and affecting the integrity of the canal stopbank. While not specifically flood damage related (or claimable) there are cost efficiencies in undertaking the pipe replacement alongside the surge chamber repairs. The Te Rahu surge chamber repair is the last of the April 2017 flood pump damage repairs and this work is scheduled for completion in summer 2019/20. Funding for the surge chamber repair is out of the flood recovery budget. Additional budget provision of \$260,000 was approved during the Annual Plan process to undertake the pipe replacement work at the same time as the flood repair.




Undertaking both pieces of work together is more cost effective and will minimise the time that the pump station is out of operation. The upgrade will also ensure that the pump station operation is secure and the stopbank integrity restored with added resilience in the event of another flood or earthquake event.


















Mark Townsend  
**Engineering Manager**

# Bay of Plenty Regional Council Toi Moana Statement of revenue and expense - Whakatane-Tauranga Rivers Scheme

For the 12 months ending 30 June 2019

Run: 06-Aug-2019




Variance Indicators					
Low <10%		Medium 10% to 30%		High >30%	

Line	Operating revenue by class	2018/19		Variance		Variance comments	2019/20
		Budget	Actual	\$	Variance indicator		Annual Plan \$000
		\$000					
1	General rates	171	171	0	-		229
2	Targeted rates	1,734	1,734	0	-		2,293
3	External interest income	5	7	1	Higher		6
4	Operating grants and subsidies	37	0	(37)	Lower	 No operational insurance recoveries received	0
5	Other revenue	57	87	30	Higher		58
6	Fees and charges	0	9	9	Higher		0
7	Revaluation and asset disposal gains	0	(0)	(0)			0
8	Investment income	261	261	0	-		345
9	<b>Total revenue</b>	<b>2,265</b>	<b>2,268</b>	<b>3</b>	Higher		<b>2,932</b>
	<b>Operating expenditure by class</b>						
10	Administration expenses	7	4	3	Lower		8
11	Other expenses	898	301	597	Lower	 Allowance for cost of a predicted flood event \$713,000	268
12	Consultancy fees	0	18	(18)	Higher		0
13	Contract work	569	384	185	Lower	 Shortage of rock supply has hindered work in this scheme	999
14	Finance costs	382	261	121	Lower	 Lower capital spend has meant lower finance costs	471
15	Depreciation and asset disposal	231	367	(136)	Higher	 Effect of 01 July 2018 asset revaluation	309
16	<b>Subtotal - expenditure</b>	<b>2,087</b>	<b>1,336</b>	<b>751</b>	Lower		<b>2,054</b>
17	<b>Net overhead charges and recoveries</b>	<b>472</b>	<b>602</b>	<b>(130)</b>	Higher	 Higher due to additional staff time spent in this scheme	<b>489</b>
18	<b>Total operating expenditure</b>	<b>2,559</b>	<b>1,938</b>	<b>622</b>	Lower		<b>2,543</b>
19	<b>Total operating surplus (deficit)</b>	<b>(295)</b>	<b>330</b>	<b>625</b>	Favourable		<b>388</b>
	<b>Capital revenue by class</b>						
20	Capital funding	860	494	(366)	Lower	 Central Government contributions in keeping with repairs being behind programme	1,230
21	<b>Total capital revenue</b>	<b>860</b>	<b>494</b>	<b>(366)</b>	Lower		<b>1,230</b>
22	<b>Total surplus (deficit)</b>	<b>566</b>	<b>824</b>	<b>258</b>	Favourable		<b>1,618</b>

# Bay of Plenty Regional Council Toi Moana Statement of revenue and expense - Whakatane-Tauranga Rivers Scheme




For the 12 months ending 30 June 2019

Run: 06-Aug-2019

Variance Indicators					
Low <10%		Medium 10% to 30%		High >30%	

	2018/19		Variance		Variance comments	2019/20
	Budget	Actual	\$	Variance indicator		Annual Plan \$000
	\$000					

### Capital expenditure by project

23	Whakatane River Capital New	846	105	742	Lower		\$480,000 was carried forward to 2019/20 for stopbank works, river modelling and Quay Street stormwater. An additional request will be made to carry forward underspend	1,084
24	Whakatane Tauranga Flood Damage Repairs	3,366	1,669	1,697	Lower		A shortage of rock supply hindered work in this scheme with underspend being transferred to 2019/20	3,127
25	<b>Total capital expenditure</b>	<b>4,212</b>	<b>1,774</b>	<b>2,439</b>	Lower			<b>4,211</b>

### Reserves

	Opening Balance \$000	Movement \$000	Closing Balance \$000
26 Flood Damage Reserve	(577)	577	0
27 Asset Replacement Reserve	0	(508)	(508) Funds available
28 Works Reserve	(376)	(302)	(678) Funds available
29 <b>Internal Loans</b>	<b>6,892</b>	<b>(299)</b>	<b>6,593</b>

	1/07/2017 \$000	Movement \$000	1/07/2018 \$000
30 <b>Asset Valuation</b>	<b>53,476</b>	<b>16,884</b>	<b>70,360</b>

# MEMORANDUM



**To:** Whakatāne-Tauranga Rivers Scheme Advisory Group

**From:** Mark Townsend  
**Engineering Manager**

**Date:** 30 August 2019

**File Ref:** A3347636

**Subject:** Gravel management update

## 1 General

In April 2018 Council made a decision that due to bed levels having declined in the top section of the reach above Ohotū Bridge that gravel extraction in this section would only be undertaken for river management purposes until recovery has taken place and desired bed levels achieved. More recent technical analysis confirms this approach due to bed level degradation between Ohotū Bridge and Limeworks (cross-sections 47 to 57).

When bed levels are too low, banks are high and have to take the full force of the flow during a flood. Banks can erode, protection works are undermined, more gravel is transported downstream to build up elsewhere, and bank protection works are more costly.

The recommendation in the last published NERMN report (Natural Environmental Regional Monitoring Network – river and stream channel monitoring) was to suspend any extraction within the active channel over the reach from about 1 kilometre upstream of the Tauranga confluence (cross-section 33) to Rūātoki Bridge (cross-section 47) until adequate recovery of the river bed is achieved.

From the recent assessment of mean bed levels, using Waterscape's (Gary Williams) active channel definition, it can be seen that bed levels appear to have recovered over the reach with the mean bed level now within or above the guideline envelope (with the exception of cross-section 40). Extractions should now be limited to locations where mean bed levels exceed the guideline envelope, particularly in the lower reach around Pekatahi Bridge up to cross-section 35.

## 2 Extractions

Currently the only extractions allocated for the Whakatāne and Tauranga rivers are for river management purposes. Specifically where flood repair work is being carried out and overflow cuts are recommended to relieve pressure on eroded banks.

10,000 m<sup>3</sup> has been approved in the upper Whakatāne River (Te Whetu Road site) for river management purposes. However land access issues have restricted the work from being completed to date.

### Whakatāne-Tauranga Rivers Scheme - Gravel extraction summary 1 July 2018 – 30 June 2019

River	Site	Confirmed Quantity (m <sup>3</sup> )
Tauranga River	Browns Pit	23,890
Whakatāne River	Te Whetu Road	Nil
Total		23,890

Mark Townsend  
**Engineering Manager**